

2003-12-09 15:54 FROM:

TO: 83004504025535254#1 P:1



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Attorney's Docket No.: 003364P021

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application for:

Ho-Jin Kweon, et al.

Application No.: 09/429,262

Filed: October 29, 1999

For: **POSITIVE ACTIVE MATERIAL FOR
RECHARGEABLE LITHIUM BATTERY
AND METHOD OF PREPARING SAME**

Examiner: Dove, T.

Art Group: 1745

DECLARATION PURSUANT TO 37 C.F.R. § 1.132

I, Dong-Gon Park, hereby declare that:

1. I am an inventor of the above-identified patent application.
2. I am a professor for Sookmyung Women's University, 53-12, Chyungpa-dong, 2ga, Yongsan-Ku, Seoul, Korea Sookmyung Women's University has an interest in the present application
3. I hold a Ph.D. (1993) in Chemistry from Cornell University and a B.S. (1982) in Chemistry from the Korea University. I am generally familiar with lithium secondary batteries.
4. I filed Application No. 09/429,262 on October 29, 1999 in the United States, claiming priority from a previously filed Korean Application.
5. In the Office Action mailed on July 9, 2003, the Patent Office rejected Claims 1-4 of the above-referenced Application as being obvious over U.S. Patent

No. 5,674,645, issued to Amatucci, in view of by U.S. Patent No. 5,869,208, issued to Miyasaka. The currently pending independent claims recite coating various manganese-based compounds in component or particle form with a metallic oxide and forming a positive electrode from the coated components. In contrast, Miyasaka coats a protective layer on the outside of the positive electrode after the positive electrode has been formed.

6. I have conducted experiments to compare the performance characteristics of devices constructed according to the limitations of the currently pending independent claims to the structure taught in Miyasaka. Specifically, I used $\text{Li}_{1.01}\text{Mn}_2\text{O}_4$, which is representative of the manganese-based compounds recited in the independent claims, for both the active material component for the device corresponding to the pending claims and for the positive electrode of the Miyasaka device. I used Al_2O_3 to coat the active material component of the device corresponding to the pending claims and to coat the positive electrode of the Miyasaka device. The coating procedure of the pending claims gives surprisingly better cycle life characteristics compared with the coating procedure taught in Miyasaka. I have attached a graph hereto showing the discharge capacity of a device constructed according to the claims compared to the discharge capacity of Miyasaka, which shows the unexpected, superior performance of the device constructed according to the pending claims. The graph is attached as Exhibit A.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date: Dec 9 2003


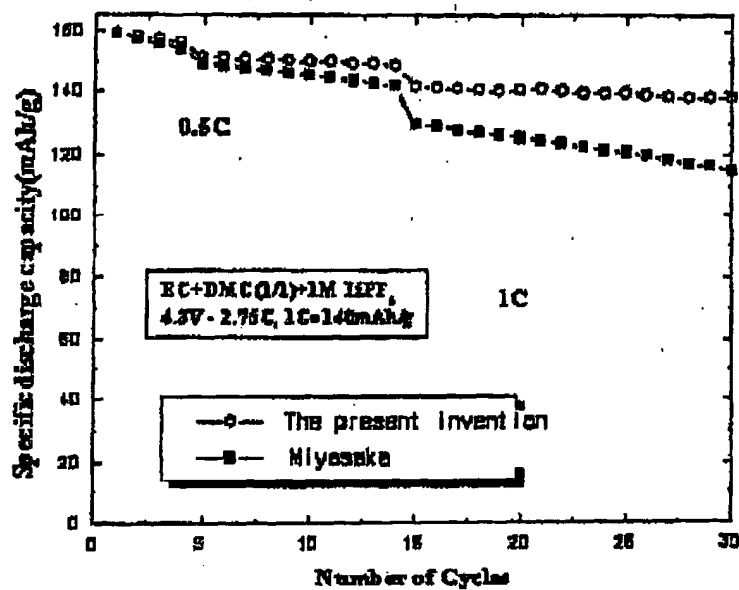

Dong-Gon Park
Inventor
Sookmyung Women's University
Cheongpa-dong 2-ga, Yongsan-ku,
Seoul, Korea

Exhibit A





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Attorney's Docket No.: 003364P021

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AND METHOD OF PREPARING SAME**

Examiner: Dove, T.

Art Group: 1745

DECLARATION PURSUANT TO 37 C.F.R. § 1.132

I, Geun-Bae Kim, hereby declare that:

1. I am an inventor of the above-identified patent application.
2. I am an Engineer for Samsung Display Devices Co., Ltd., 575, Sin-Dong, Paldal-Ku, Suwon-Si, Kyungki-Do, Korea. Samsung Display Devices Co., Ltd. has an interest in the present application.
3. I hold a Ph.D. (1990) in Chemistry from Seoul National University and a B.S. (1986) in Chemistry from the Seoul National University. I am generally familiar with lithium secondary batteries.
4. I filed Application No. 09/429,262 on October 29, 1999 in the United States, claiming priority from a previously filed Korean Application.
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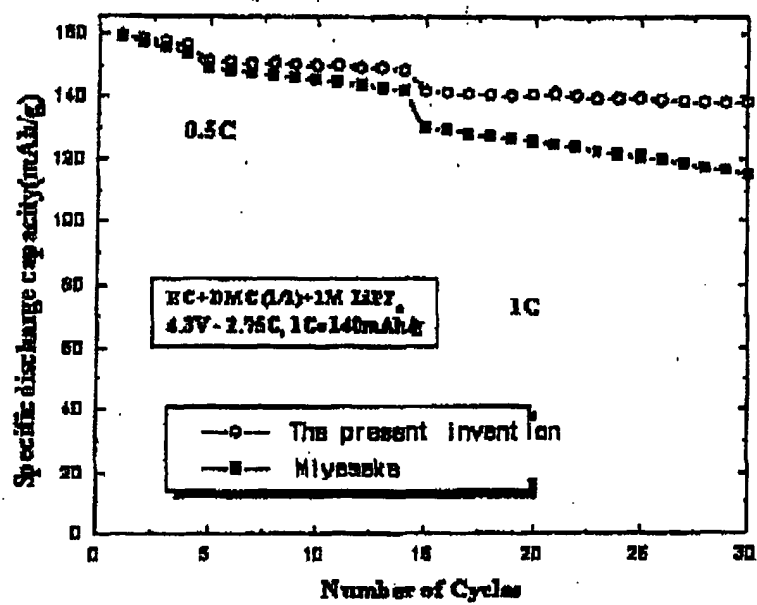
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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date: 9. Dec. 2003.

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Geun-Bae Kim
Inventor
San 24, Seongseong-dong, Cheonan-si,
Chungcheongnam-do, Korea

Exhibit A



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Attorney's Docket No.: 003364P021

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AND METHOD OF PREPARING SAME**

Examiner: Dove, T.

Art Group: 1745

DECLARATION PURSUANT TO 37 C.F.R. § 1.132

I, Hyung-gon Noh, hereby declare that:

1. I am an inventor of the above-identified patent application.
2. I am an Engineer for Samsung Display Devices Co., Ltd., 575, Sin-Dong, Paldal-Ku, Suwon-Si, Kyungki-Do, Korea. Samsung Display Devices Co., Ltd. has an interest in the present application.
3. I hold a Ph.D. (1990) in Chemistry from the University of KAIST and a B.S. (1986) in Chemistry from the University KAIST. I am generally familiar with lithium secondary batteries.
4. I filed Application No. 09/429,262 on October 29, 1999 in the United States, claiming priority from a previously filed Korean Application.
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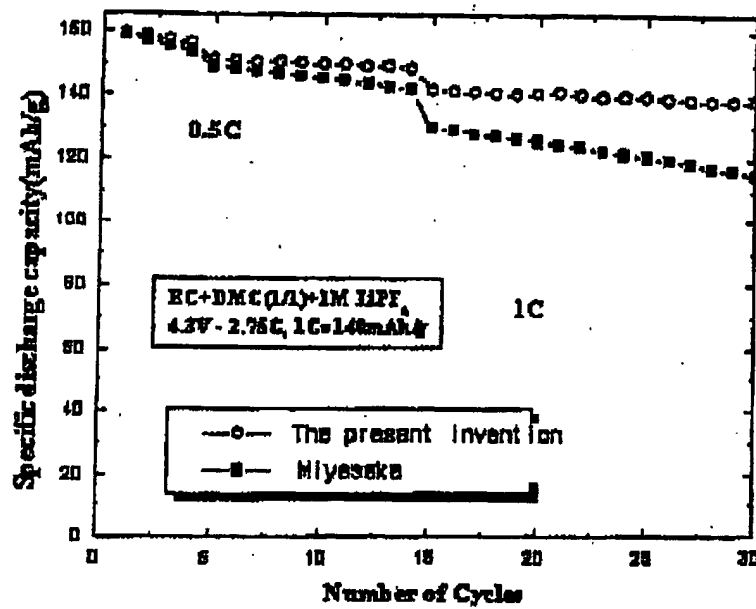
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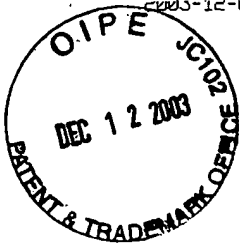
6. I have conducted experiments to compare the performance characteristics of devices constructed according to the limitations of the currently pending independent claims to the structure taught in Miyasaka. Specifically, I used $\text{Li}_{1.01}\text{Mn}_2\text{O}_4$, which is representative of the manganese-based compounds recited in the independent claims, for both the active material component for the device corresponding to the pending claims and for the positive electrode of the Miyasaka device. I used Al_2O_3 to coat the active material component of the device corresponding to the pending claims and to coat the positive electrode of the Miyasaka device. The coating procedure of the pending claims gives surprisingly better cycle life characteristics compared with the coating procedure taught in Miyasaka. I have attached a graph hereto showing the discharge capacity of a device constructed according to the claims compared to the discharge capacity of Miyasaka, which shows the unexpected, superior performance of the device constructed according to the pending claims. The graph is attached as Exhibit A.

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Date: 2003. 12. 9

Noh Hyung Gon
Hyung-Gon Noh
Inventor
San 24, Seongseong-dong, Cheonan-si
Chungcheongnam-do, Korea

Exhibit A



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Examiner: Dove, T.

Art Group: 1745

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I, Ho-Jin Kweon, hereby declare that:

1. I am an inventor of the above-identified patent application.
2. I am an Engineer for Samsung Display Devices Co., Ltd., 575, Sin-Dong, Paldal-Ku, Suwon-Si, Kyungki-Do, Korea. Samsung Display Devices Co., Ltd. has an interest in the present application.
3. I hold a Ph.D. (2000) in Department of Chemistry from the Sungkyunkwan University and a B.S. (1987) in Chemistry from the Korea University. I am generally familiar with lithium secondary batteries.
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Date: Dec. 9, 2003

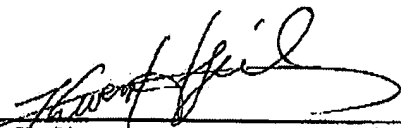

Mo-Jin Kweon
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Exhibit A